

Application adaptive exponential synchronization of chaotic dynamical systems in secure communications

ABSTRACT

Synchronization of chaotic systems which is defined based on the exponential stability for encrypts of signals is presented in this paper. An adaptive control scheme is proposed, and the convergence of the synchronized error is guaranteed. Masking and modulation methods are applied for encryption. To verify the effectiveness of the proposed schemes, numerical simulation was applied on a well-known system without linear term chaotic using MatLab software. The comparison of the proposed chaotic synchronization in the case of the synchronization rate and in the decryption precision of sent signal and image are shown.

Keyword: Synchronization; Chaos; Exponential; Stability; Encryption